

ABSTRACT

The invention is directed to a catheter that creates enhanced lesions using a needle electrode and can simultaneously map electrical activity at a plurality of points using an enhanced mapping assembly. The catheter comprises an elongated catheter body having at least one lumen extending longitudinally therethrough. A needle control handle is provided at the proximal end of the catheter body. A needle electrode assembly extends through the catheter body and needle control handle and has a proximal end attached to the needle control handle and a distal end within the distal end of the catheter body. A mapping assembly is mounted at the distal end of the catheter body and comprises at least two flexible spines. Each spine has a proximal end attached at the distal end of the catheter body and a free distal end. Each spine carries at least one electrode. The distal end of the needle electrode assembly is extendable past the proximal end of the mapping assembly upon manipulation of the needle control handle.

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